

REMARKS

Favorable reconsideration of this application is respectfully requested in light of the following remarks. Claims 1-11 are pending in this application.

As an initial matter, the specification stands objected to because the abstract is too long. As a result, Applicants have replaced the abstract with a substitute abstract containing less than one hundred and fifty words. Accordingly, withdrawal of the objection to the specification is respectfully requested.

Beginning on page 2 of the Official Action, Claims 1-2 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-3 and 5 of U.S. Patent No. 6,644,012. As a result, Applicants are submitting a terminal disclaimer. Accordingly, withdrawal of the double patenting rejection is respectfully requested.

Claims 1-2 and 4-6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over GB 2 236 145 *Hines*, in view of U.S. Patent No. 5,329,758 to *Urbach et al.* Claims 10-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over *Hines*, in view of *Urbach et al.*, and further in view of Design Choice.

Applicants express gratitude to the Examiner for the courtesies extended Applicants' attorney during the recent interview. However, during the recent interview, an agreement with respect to the claims was not reached. However, Applicants would like to reiterate the points made during the interview. In particular, Applicants submitted that the ejector disclosed by *Hines* serves to equalize the pressures of the steam and the air, rather than increase the pressure of the cooling air. In particular, it is not described in *Hines* whether this is achieved by throttling the

steam by leading it through the Carnot type diffuser at the steam exit 422. During the interview, the Examiner stated that the specification lacks description regarding the specific type of ejector. However, Applicants direct the Examiner's attention to paragraph [0018], for example, which specifies that the fluid "flows out at high speed through a nozzle, which is arranged in about the narrowest cross section of a convergent-divergent flow cross section of the cooling air duct". This is just one exemplary embodiments of an ejector suitable for increasing the pressure of a driven fluid by leading a working fluid through a nozzle into the driven fluid.

In contrast, the arrangement disclosed *Hines* is not suitable for effectively increasing the pressure of the cooling air, but rather only suitable for mixing the steam and the air. Therefore, *Hines* fails to disclose means for increasing the pressure of flowing cooling air are arranged in the cooling air duct and that the means for increasing the pressure are ejectors operable with a working fluid.

Furthermore, *Hines* clearly describes that the steam is not injected for driving a cooling air flow, but for replacing the cooling air by steam. See, for example, page 8, lines 12-17, where it is described that in injecting steam, the amount of air for cooling purposes may be reduced. In contrast, in the current application, it is described that the pressure of the flowing cooling air should be increased to increase the cooling air mass flow. See paragraph [0007] of the application. *Hines* proposes a gas turbine engine which is steam cooled. Cooling air is only described as either a preferred embodiment, or a back up solution. See, for example, page 8, line 7. In addition, *Hines* explicitly describes that steam in as large of an amount as possible is used for cooling purposes. See page 6, lines 15-25. As such, *Hines* disclosure

clearly contradicts the claimed system where the ejector working fluid mass flow is described as driving the cooling air mass flow.

Finally, as *Hines* is concerned primarily about steam cooling a gas turbine engine, the skilled person would not consider limiting the steam mass flow to a comparatively low level of less than twenty percent of the driven cooling air mass flow, which is considered low enough not to have a significant effect as a coolant. See paragraph [0013] in the specification of the pending application.

Urbach et al. does not make up for that which is missing from *Hines*. In particular, *Urbach et al.* does not disclose limiting the steam fraction of a coolant mass flow. In contrast, the passage in *Urbach et al.* relied upon by the Examiner relates to a power augmentation steam mass flow related to the compressor mass flow of a gas turbine. *Urbach et al.* makes absolutely no mention of a cooling air mass flow, let alone increasing the pressure of the cooling air mass flow with a working fluid through an ejector. As such, one having ordinary skill in the art would have no motivation to limit the steam fraction of the coolant to a percentage which is considered low enough not to have a significant effect as a coolant, particularly, when starting from the disclosure of *Hines*. Moreover, *Urbach et al.* provides no suggestion to the twenty percent value. Accordingly, neither *Hines* nor *Urbach et al.*, in combination or alone, disclose the patentable features of independent Claim 1.

For at least the foregoing reasons, as submitted at the gas turbine set as defined in independent Claim 1, and the claims depending therefrom, is patentably distinguishable over the applied documents. Accordingly, withdrawal of the rejections of record and allowance of this application are earnestly solicited.

Should any questions arise in connection with this application, or should the Examiner believe a telephone conference would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that she be contacted at the number indicated below.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: August 26, 2004

By:


Elaine P. Spector
Registration No. 40,116

P.O. Box 1404
Alexandria, Virginia 22313-1404
(703) 836-6620